

WHAT IS CLAIMED IS:

1. An optical disk comprising:
 - a first area which is both readable and writable;
 - and
 - a second area which is only readable;wherein first data to be recorded in said first area is recorded by a first recording method and a first modulating method;
 - second data to be recorded in said first area is recorded by a second recording method and a second modulating method; and
 - third data to be recorded in said second area is recorded by said second recording method and said second modulating method.
2. An optical disk as claimed in claim 1, wherein said first data to be recorded in said first area has a predetermined frame structure and a predetermined block structure for error correction; and
 - said third data to be recorded in said second area has a frame structure and a block structure for error correction that are identical with said frame structure and said block structure for error correction of said first data.

3. An optical disk as claimed in claim 1, wherein

a ratio between frame length of said first data to be recorded in said first area and frame length of said third data to be recorded in said second area is a simple ratio of integers.

4. An optical disk as claimed in claim 3, wherein when b frames of said third data are recordable in a length of a frames of said first data, the frame length of said third data is set such that a value of b/a is as close as possible to a recording density ratio c/d between data recording density c of said first area and data recording density d of said second area.

5. An optical disk as claimed in claim 3, wherein when b frames of said third data are recordable in a length of a frames of said first data, the frame length of said third data is set such that a is as small an integer as possible.

6. An optical disk as claimed in claim 1, wherein said first area includes a third area for recording fourth data necessary for recording and reproducing said first data by a cluster unit; and said second data is recorded in said second area, while said third data is recorded over an entire area where said second data is not recorded.

7. An optical disk as claimed in claim 1, wherein

said first area includes a third area for recording fourth data necessary for recording and reproducing said first data over a plurality of segments; and said second data is recorded in said second area, while said third data is recorded over an entire area where said second data is not recorded.

8. An optical disk as claimed in claim 1, wherein said first modulating method is an RLL (1, 7) modulation; and said second modulating method is an RLL (2, 7) modulation.

9. An optical disk as claimed in claim 1, wherein said first recording method is a recording method using phase change; and said second recording method is a recording method using a pit.

10. An optical disk as claimed in claim 1, wherein said first recording method is a recording method using magneto-optical recording; and said second recording method is a recording method using a pit.

11. An optical disk playback apparatus for reproducing data recorded on an optical disk including a first area which is both readable and writable and a second area which is only readable, said optical disk playback apparatus comprising:

first demodulating means for demodulating first

data recorded in said first area and second data recorded in said second area by a first demodulating method; and second demodulating means for demodulating third data recorded in said first area by a second demodulating method on the basis of said first data demodulated by said first demodulating means.

12. An optical disk playback apparatus as claimed in claim 11, further comprising:

an error correction means for correcting an error of said third data demodulated by said second demodulating means and an error of said second data demodulated by said first demodulating means.

13. An optical disk playback apparatus as claimed in claim 11, wherein said first demodulating method is an RLL (2, 7) demodulation, and said second demodulating method is an RLL (1, 7) demodulation.

14. An optical disk playback method for an optical disk playback apparatus for reproducing data recorded on an optical disk including a first area which is both readable and writable and a second area which is only readable, said optical disk playback method comprising:

a first demodulating step for demodulating first data recorded in said first area and second data recorded in said second area by a first demodulating method; and

a second demodulating step for demodulating third data recorded in said first area by a second demodulating method on the basis of said first data demodulated by processing of said first demodulating step.

15. A recording medium for recording a computer readable program for an optical disk playback apparatus for reproducing data recorded on an optical disk including a first area which is both readable and writable and a second area which is only readable, said computer readable program comprising:

a first demodulating step for demodulating first data recorded in said first area and second data recorded in said second area by a first demodulating method; and

a second demodulating step for demodulating third data recorded in said first area by a second demodulating method on the basis of said first data demodulated by processing of said first demodulating step.

16. An optical disk recording apparatus for recording data on an optical disk including a first area which is both readable and writable and a second area which is only readable,

wherein second data is prerecorded by a first recording method and a first modulating method in said first area;

third data is prerecorded by said first recording method and said first modulating method in said second area;

said modulating means modulates said first data by a second modulating method different from said first modulating method; and

said recording means records said first data on said optical disk by a second recording method different from said first recording method.

17. An optical disk recording apparatus as claimed in claim 16, wherein said third data with a predetermined frame structure and a predetermined block structure for error correction is prerecorded in said second area; and said recording means records on said optical disk said first data with a frame structure and a block structure for error correction that are identical with said frame structure and said block structure for error correction of said third data.

18. An optical disk recording apparatus as claimed in claim 16, wherein said first modulating method is an RLL (2, 7) modulation; and said second modulating method is an RLL (1, 7) modulation.

19. An optical disk recording apparatus as claimed in claim 16, wherein said first recording method is a

recording method using a pit; and said second recording method is a recording method using phase change.

20. An optical disk recording apparatus as claimed in claim 16, wherein said first recording method is a recording method using a pit; and said second recording method is a recording method using magneto-optical recording.

21. An optical disk recording method for an optical disk recording apparatus for recording data on an optical disk including a first area which is both readable and writable and a second area which is only readable,

wherein second data is prerecorded by a first recording method and a first modulating method in said first area;

third data is prerecorded by said first recording method and said first modulating method in said second area;

the processing of said modulating step modulates said first data by a second modulating method different from said first modulating method; and

the processing of said recording step records said first data on said optical disk by a second recording method different from said first recording method.

22. A recording medium for recording a computer readable program for an optical disk recording apparatus for recording data on an optical disk including a first area which is both readable and writable and a second area which is only readable,

wherein second data is prerecorded by a first recording method and a first modulating method in said first area;

third data is prerecorded by said first recording method and said first modulating method in said second area;

the processing of said modulating step modulates said first data by a second modulating method different from said first modulating method; and

the processing of said recording step records said first data on said optical disk by a second recording method different from said first recording method.

23. An optical disk including a first area which is both readable and writable and a second area which is only readable,

wherein data to be recorded in said first area is recorded on the basis of a signal modulated by a first modulating method; and

data to be recorded in said second area is recorded

on the basis of a signal modulated by a second modulating method different from said first modulating method.

24. An optical disk playback apparatus for reproducing data recorded on an optical disk including a first area which is both readable and writable and a second area which is only readable, said optical disk playback apparatus comprising:

a first demodulating means for demodulating data recorded in said first area by a first demodulating method; and

a second demodulating means for demodulating data recorded in said second area by a second demodulating method different from said first demodulating method.

25. An optical disk playback method for an optical disk playback apparatus for reproducing data recorded on an optical disk including a first area which is both readable and writable and a second area which is only readable, said optical disk playback method comprising:

a first demodulating step for demodulating data recorded in said first area by a first demodulating method; and

a second demodulating step for demodulating data recorded in said second area by a second demodulating method different from said first demodulating method.

26. A recording medium for recording a computer readable program for an optical disk playback apparatus for reproducing data recorded on an optical disk including a first area which is both readable and writable and a second area which is only readable, said computer readable program comprising:

a first demodulating step for demodulating data recorded in said first area by a first demodulating method; and

a second demodulating step for demodulating data recorded in said second area by a second demodulating method different from said first demodulating method.

27. An optical disk recording apparatus for recording data on an optical disk including a first area which is both readable and writable and a second area which is only readable and has data prerecorded on the basis of a signal modulated by a first modulating method, said optical disk recording apparatus comprising:

a modulating unit for modulating said data by a second modulating method different from said first modulating method; and

a recording unit for recording said data in said first area on the basis of a signal modulated by said modulating unit.

28. An optical disk recording method for recording data on an optical disk including a first area which is both readable and writable and a second area which is only readable and has data prerecorded on the basis of a signal modulated by a first modulating method, said optical disk recording method comprising:

a modulating step for modulating said data by a second modulating method different from said first modulating method; and

a recording step for recording said data in said first area on the basis of said modulated signal.

29. A recording medium for recording a computer readable program for an optical disk recording apparatus for recording data on an optical disk including a first area which is both readable and writable and a second area which is only readable and has data prerecorded on the basis of a signal modulated by a first modulating method, said computer readable program comprising:

a modulating step for modulating said data by a second modulating method different from said first modulating method; and

a recording step for recording said data in said first area on the basis of said modulated signal.